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INDIANS AT • WORK



• OCTOBER 1, 1933 •

AN • EMERGENCY • CONSERVATION
NEWS • SHEET • FOR • OURSELVES

OFFICE • OF • INDIAN • AFFAIRS
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I N D I A N S A T W O R K

C O N T E N T S O F T H E I S S U E F O R O C T O B E R 1 , 1 9 3 3

Volume I Number 4

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Editorial space in this issue of INDIANS AT WORK is surrendered to make room for articles dealing with the Indian land problem. These articles are to be found on pages 4 and 9.

A good friend of the Indians sends us a letter: "I am afraid that INDIANS AT WORK is over-optimistic." His letter comments on shortcomings which he personally has observed here and there. There are, indeed, many shortcomings. But we do not think that INDIANS AT WORK has been too optimistic when the facts are viewed in perspective.

Here are some items:

Indian forests have been grievously under-protected from fire. Indian Emergency Conservation Work has largely improved this condition.

Indian Service expenditures on water-development, across many years gone by, have been concentrated on grandiose projects destined to be used chiefly by whites and sometimes destined not to be used efficiently by whites or Indians. Indian Emergency Conservation has radically shifted the water-development trend. The projects now, through Indian Emergency Conservation Work, are small, Indian-built, capable of being Indian-maintained, and certain to be used by the Indians themselves.

Much camping has been done in the past by Indians, on road work and other Indian Service projects. Camp hygiene, dietary and the use of idle time have been left to take care of themselves. Indian Emergency

Conservation Work has revolutionized that past situation. Sanitation and dietary, tidiness of camp life, and some methodical, purposeful use of idle time have been generally achieved. The new level will be maintained hereafter.

One of the severest criticisms of the Indian Service, and impliedly of the Indians as well, in all the years gone by, has been the preponderance of whites engaged in Indian service of all types. The Indian Emergency Conservation Work has not merely brought into useful group work nearly 15,000 Indians in many States, but has rapidly placed Indians in managerial positions. Probably never before have the Indians so largely guided their own work.

The enormous and pressing subject of the destruction of Indian lands through erosion has hardly been in the consciousness of the Indians until now. Indian Emergency Conservation Work has brought it to the forefront of their consciousness, has accomplished measurable results in the immediate checking of erosion and has laid a foundation for a comprehensive, far-reaching plan of erosion control, particularly in the Southwest, but ultimately in the Dakotas and Oklahoma as well.

As a final item, Indian Emergency Conservation Work has demonstrated once and for all that the handicapped Indians of the allotted areas want to work, and that, when associated in groups working for their common good, they are just as faithful and just as productive as are those Indians of the Southwest whose life has never been disrupted by the allotment system or the ration system.

This demonstration has furnished the justification for a program of consolidating and enlarging the agricultural lands in the allotted areas and capitalizing the allotted Indians so that they can use their lands successfully. Broadly speaking, it has justified what previously was only a faith, namely: that the allotted Indians will, if given a chance, "make good" on the land.

We do not want INDIANS AT WORK to be unrealistically cheerful. Still less do we want criticisms to be mitigated in their serverity. But we believe, on such totality of evidence as has flowed into the central Office, that Indian Emergency Conservation Work participants, Indian and white, are justified in feeling as they generally do feel: that the effort is a success.

JOHN COLLIER,

Commissioner of Indian Affairs.

THE INDIANS' MASTER-PROBLEM: LAND

The appointment of Mr. Ward Shepard as specialist in land policies (page 9) challenges the attention of every Indian Service employee and every Indian. The Ward Shepard appointment connects with that of Robert Marshall to head the Indian Forest Service; and of James Stewart to head the administrative end of lands work in the Indian Office. It connects with the recent departmental order which stops the sale of Indian allotted land; with the declaration of policy that Indian tribal operation of forests shall be encouraged in place of the contract cutting of timber; with the determined effort to check destructive erosion on Indian lands and to start the rehabilitation of the millions of acres already damaged by erosion; and with that effort which is known as the Indian Emergency Conservation Work. Above all it connects with the basic policy of this Indian Administration: to halt the process by which the Indians have been deprived of two-thirds of their lands and to begin a reverse process of restoring and building up and developing the entire Indian estate as the basis of Indian culture, independence, and self-support.

Unless the Indian land situation can be met, there is no future for the Indian.

What Must Be Done

The shrinkage of Indian lands must be stopped; new lands must be bought, or obtained through exchange, from the public domain or otherwise, for the disinherited allotted Indians; the Indian lands must be consolidated for communal management; the deterioration of Indian range lands must be checked, and long-range planning must be applied to the increase of their productivity; the wasteful destruction

of Indian timber must be brought to an end; credit must be furnished to Indians, as it is to white agriculturists, for the full development of farming, livestock-raising, and forestry. We must replace the destructive allotment, leasing and homesteading system with a constructive, planned program, and re-integrate the Indian lands for Indian use.

Development.— Aside from a few earlier pits here and there along the outcrop of the vein the only development is the present quarry, the face of which has been opened 15 to 25 feet for much of the width of the vein. At the time of the writer's visit the face of the quarry had not been entirely cleaned. Stripping with plow and scraper at the top was just beginning, and men were working on the massive layer, removing blocks of about the dimensions indicated above. A test hole in the massive layer, drilled about 20 feet deep in the floor of the quarry, had disclosed similar material to at least that depth. The blocks were separated by drilling holes close together and by wedging rather than by blasting, in order to avoid damage. These blocks were hauled by truck to the railroad. The material thus far shipped has been sent to St. Paul, where it has been sawed and polished for use in demonstrations.

The onyx

General character.— The stone being quarried exhibits a vertical banding structure, in which the larger bands, each composed of thinner layers, are about half or three quarters of an inch wide. These bands of pure calcite have formed successively in what appears to have been a progressively widening fissure. Throughout much of the massive zone and in a lesser degree in other parts of the vein the successive layers are joined firmly together to form a solid mass that has few or no visible openings. In some places in this zone, however, and to a greater extent elsewhere in the vein the vertical layers do not completely join, so that cavities ranging from those of minute size to some 1 foot or more in longest dimension have been formed. These have been filled progressively to a greater or less extent, so that they are themselves walled by curved bands of calcite. Some have been completely filled; others are still open but lined with projecting crystals that form mammillary groups or peculiar clusters or individuals, the whole giving the effect of a series of geodes.

The progressive opening of the fissure, with perhaps some differential movement of the walls during the process of deposition of the onyx, has served to fracture some of the material previously deposited and to permit later filling of the newer fractures. Thus a considerable degree of irregularity of deposition has occurred, and this serves to provide ornamental stone with different patterns, markings, and textures.

The onyx polishes well, and many beautiful patterns or combinations of patterns may be obtained, according to the nature of the block selected and the direction in which the block is sawed. For example, a vertically banded block sawed at right angles to the direction of banding will give slabs that have a characteristic banded effect, somewhat wavy because the bands are more or less irregular. If sawed parallel to the banding the material will tend to be more uniform, depending on the regularity of the banding and the relative amount of fracturing. If a block containing some of the other irregularities noted is chosen the direction of sawing will affect the appearance of the resulting slabs in corresponding but different ways.

The Trap Can Be Opened

We want the Indians to begin thinking, not after Congress meets but at once.

We want, for example, the Indians to consider these questions:

In order to save their lands and to get their estate into a consolidated condition permitting its real use by the Indians, will allotted Indians be prepared to surrender their vested right in their allotments, taking in place of it a life tenure and an equity in the tribal estate?

Will Indian tribes be prepared to use their tribal funds, and to use loans, duly secured, from Congress, in order to buy back the allotted lands of deceased allottees, making these lands a part of the tribal holdings for businesslike management or reassigning them for the individual use of individual Indians, according to need?

Will tribes of Indians, particularly in the North and Northwest, be prepared, as a means toward salvaging their lands and establishing their own prosperity, to forget or to override factionalism, internal politics, and the traditional conflicts between Indians and the Government, and to organize themselves into genuine cooperative bodies fit to deal with

big issues? For unless the tribes can thus supply their own part of the needed action, the Government cannot and probably will not supply its part.

Will young Indians respond eagerly and industriously to a program of education designed to equip them for technical and administrative work in forestry, grazing, erosion control, irrigation, agricultural extension, livestock raising, and general land management?

We are anxious and urgent to hear from Service employees, from Tribal Councils, and from individual Indians. We want replies to the questions asked above. We want new questions asked, or criticism, or any helpful ideas.

The need is not a one, single, clear-cut reform, but a many-sided attack upon the land and economic problem of the Indian; and an experimental action, broken into many geographical divisions. Let these be supplied, and the trap of the allotment system will be opened. The allotted Indian will live on and will come again into his own.

THE WAY IT ACTUALLY IS WITH ALLOTMENT

Fred A. Baker, Superintendent at the Sisseton Agency, writes under date of September 20, 1933:

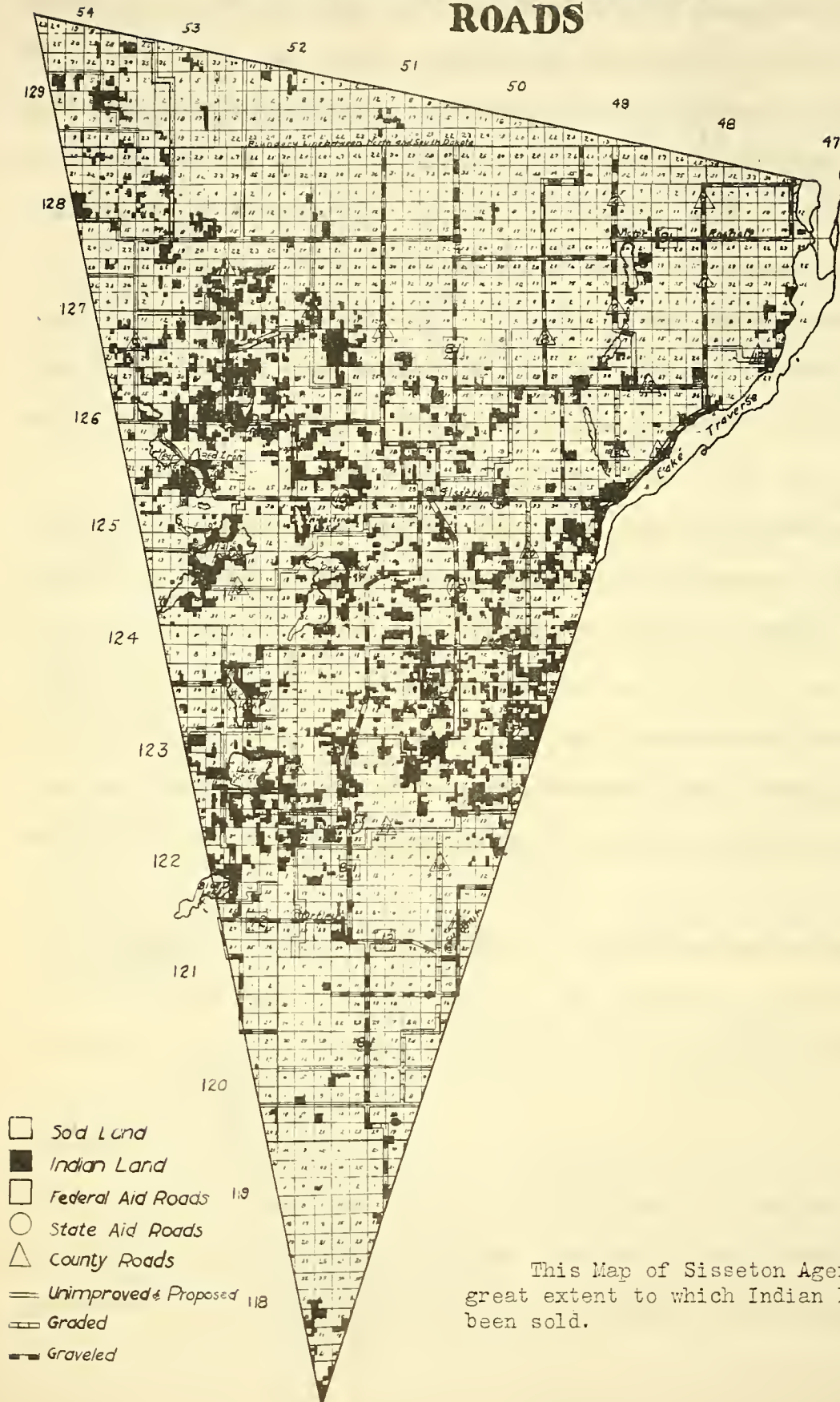
On the Sisseton Indian Reservation in South Dakota I am making a careful study of the land question and shall submit to you a memorandum thereon as soon as I shall have completed my survey. In this jurisdiction I am prepared now to

recommend that the Government purchase such inherited lands as have a considerable number of heirs. Something along this line must be done in the near future as the burden of leasing this land will become unbearable. In one instance an inherited allotment on this reservation has over one hundred heirs. The task of getting the signatures to a lease on this land and the clerical work involved in dividing the rentals requires an immense amount of time. The land cannot be partitioned - no court of equity would decree such action - none of the heirs is financially able to purchase the undivided interests of the other heirs. This leaves only the sale of the land as a method of giving each heir his lawful share as determined by the probate division. And this is just the thing which should not be done.

Too much land has already been sold; in fact practically all the good farming land on this reservation has been disposed of leaving the inferior land in the hands of the Indians. No allotments of land have been made to the Sisseton Indians since the year 1892; there are no more surplus lands to be allotted; within possibly twenty-five years all the land on this reservation will be inherited land. Unless something is done quickly ownership of lands by the Indians will end and they will become wanderers over the face of the earth or perish miserably in dire poverty.

I regard the settlement of the land question on this reservation as the most important question confronting the Government at this time. It lies at the base of all reforms in Indian administration. No progress can be made until some solution is made for it. I shall not be able to do very much for the Sisseton Indians unless definite and proper measures are taken by the Congress, or otherwise, to settle this question. The young men and women here have many inherited interests in allotments scattered over a wide area, but all of these interests are undivided. Very few young people have a definite tract of land that they can call their own.

SISSETON AGENCY ROADS



This Map of Sisseton Agency shows the great extent to which Indian lands have been sold.

APPOINTMENT OF WARD SHEPARD

Mr. Ward Shepard has been appointed Special Adviser on Land Policies to Mr. John Collier, Commissioner of Indian Affairs, by the Honorable Harold L. Ickes, Secretary of the Interior. Mr. Shepard, who is a forester by profession and has had wide experience in public land administration and in the formulation of national land policies, will have the task of studying the entire range of Indian land problems and of formulating long-time policies and legislation designed to halt the dissipation and deterioration of Indian lands, to give the Indians secure land tenure, and to train them to manage and operate their own forests, grazing ranges and farming lands.

"The Indians' land problem is their life problem," Commissioner Collier said. "We have now temporarily halted the wastage of Indian lands by stopping their sale to whites as carried out under the Indian allotment system. But our first action must be only a beginning. The allotment system must be revised from top to bottom. The downward process of fifty years must be reversed. The appalling deterioration of Indian range-lands from erosion must be checked, and the lands must be salvaged and rebuilt, and it is the Indians themselves who must take the main responsibility and do the bulk of the actual work. Under the President's re-forestation program, the Indians have demonstrated their willingness and their growing capacity to do their part in the new program. But the extremely critical situation is as yet only slightly relieved. It calls for long-range effort, carried out with long-range planning. For this planning and development task Mr. Shepard has been appointed."

Mr. Shepard was born in Ohio forty-six years ago, graduated from Harvard College and the Harvard Forest School, has had long experience in the United States Forest Service and with public conservation agencies, and has been active in forwarding Federal forestry and grazing-land policies.

During the past fifteen months, he made an extensive study of public forest policies in Germany and central Europe under the auspices of the Carl Schurz Memorial Foundation. During the past summer he had a leading part in embodying forest conservation provisions in the Code of the lumber industry, under which the industry has definitely engaged to abolish further destructive exploitation of the many millions of acres of forest owned and operated by it.

* * * * *

J. H. Mitchell, Superintendent of Standing Rock Agency writes of the practical results of ECW in his territory as follows:

There are 675 families in the Standing Rock jurisdiction. More than one-half have benefitted out of Emergency Conservation funds. Forty percent of the pay of the enrolled men is being held out and placed to their credit with the Superintendent. Our Conservation money and the \$45,000 allotted for road work reduces the relief problem of Standing Rock to a minimum.

More dams are being built at Standing Rock than anywhere in this district and I have singled out this reservation for the purpose of analysis and study. There are several interesting angles. First, for the point of view of putting our funds into actual labor, dam building rates nearly 100 percent; second, as an asset dams unquestionably rate higher than any other type of production in that more families are actually benefitted by dam construction. At Standing Rock, I have made a very careful study and it is estimated that the grazing lands affected by these water-holes, benefit nearly 75 percent of the Indian families on this reservation.



START OF AN ARROYO
Absence Of Grass - Near Sanastee, N. M.

W H Y D O E R O S I O N C O N T R O L W O R K ?

W H A T D O E S I T M E A N ?

W H E R E I S I T G O I N G ?

By Charles W. Collier

Forty years ago the Navajo Reservation was covered with heavy grass and high sage. Now the grass is sparse or gone and the sage small and scattered.

THEN, there were no arroyos and few washes. NOW, vast areas are cut to pieces with arroyos growing larger with every rain and with washes through which great floods flow.

THEN, in many of the valley bottoms there were semi-swamps and strings of



SECOND STAGE ARROYO
Once Rich Hay Land - Near Tohatchi, N. M.

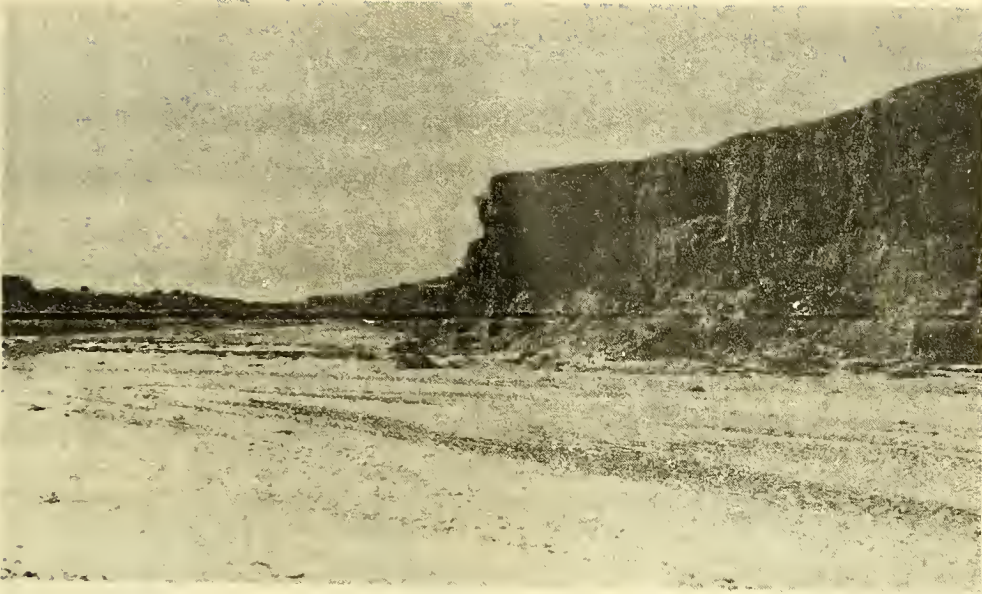
lakes abounding in wild duck. NOW, the swamps are drained by deep arroyos and the lakes are filled with silt.

THEN, there flowed from the mountains perpetual streams in some of which lived fish and beaver. NOW, the streams are mostly dry.

THEN, the land supported quantities of game--deer, antelope. NOW, the game is gone.

THEN, the Navajo race had a land wonderful to live upon. NOW, they struggle to live; their sheep starve; their fields lack water and are covered with blown sand their wells go dry; and they go hungry.

And soon--if conditions are not changed, the grass will all be gone and the sheep will die. There will be no water for the fields, and the Navajo race will die



FINAL DEVELOPMENT OF AN ARROYO
Once A Rich Grassy Valley - Now Valley Floor Almost Gone.
Chaco Canon, N. M.

WHAT HAS BROUGHT AND IS BRINGING THIS CATASTROPHIC CHANGE TO PASS?

The answer is simple. When the Navajo population was small, there were conditions of natural equilibrium. Then the population began to grow. The Navajos raised more and more sheep for food and wool, and as the sheep grew in number they ate more and more grass, until finally there were so many sheep that the grass was consumed faster than it could grow. And so the grass began to disappear and leave the bare earth exposed, and where the rain used to be held by the sod as though in a sponge, now it runs away rapidly over the bare earth. As the water ran away more and more rapidly it became brown with suspended silt and be-

gan to cut down into the earth to form arroyos. And the arroyos in turn drained away water from underneath the earth, water reached by the deep grass roots. So now the grass began to dry up as well as be eaten up, and a wicked circle was established, operating from cause to effect in the following order: overgrazing--less grass--more water run-off--more arroyos cut out--more drainage--less water for the grass--less grass--more overgrazing--still less grass--even more water run-off--etc., etc., which process, if unchecked, will continue until the reservation is an uninhabitable desert.



RESULTS OF EROSION IN THE CHUSKA MOUNTAINS.
Once Fine Grazing Land - Now Only Bare Roots.

Many people have construed the changes of the last forty years as being due to a change in climate; some have said, "The grass is drying up, therefore, there is less rain". Others have said, "We have floods which cut out the arroyos; therefore, we have more rain". Actually, the records show that there has been no real change in the amount of rainfall. The drying up of the grass is due to less of the rainfall, sinking into, and being held in the soil (because of increased percentage of runoff and drainage by arroyos). And the floods are caused by the tremendously increased and, therefore, very rapid runoff. Where, before, only perhaps one-fourth of a heavy rainfall would be drained as clear water from a watershed over a period of 24 hours,

now perhaps three-fourths of the same total rainfall drains from the same watershed as muddy water over a period of three hours, thus causing a great flood crest and rapid erosion.

The situation described exists for the same or equivalent reasons not only on the Navajo Reservation, but also on the Hopi, Zuni, Southern Ute, and Jicarilla-Apache Reservations, as well as on much of the privately owned land in the West and on most of the public domain. In the Middle West and the Eastern States the situation exists in another but equally serious form due to improper means of land cultivation.

THE SITUATION IS A NATIONAL MENACE

as well as an immediate threat to the existence of the Navajo and other Indian nations. Indeed, the existence of the United States itself as a permanent nation is at stake. Either the problem of erosion control is going to be solved in the country as a whole or this nation is going to follow the path which has been followed by many other great nations, namely: increasingly rapid destruction of agricultural, forest and grazing lands, accompanied by increasingly serious floods, until finally we have reached the condition of Central Asia and North Africa, once densely populated regions, now reduced

to uninhabitable desert areas draining into dangerously flooded valleys as a result of man's misuse of the land.

IS THERE ANY SOLUTION? Yes. The Indians of Peru in South America solved the problem a thousand years ago. The nation of Italy is now reclaiming lands destroyed by the Romans, and preventing the destruction of new lands, but at the tremendous cost of \$450,000,000 over ten years. Most of the older European countries are applying some sort of solution.

The Mexican Springs Erosion Station And Its Relation To The National Erosion Control Program.

A part of President Roosevelt's great National Planning Program has been the establishment of a National Erosion Control Commission with power to establish great erosion control demonstrations in various parts of the United States. One of these demonstrations, it is expected, will take place on the Navajo Reservation and will center around the Mexican Springs Erosion Station. For the demonstration it is hoped that \$1,000,000 is to be available over a period of two years. Part of this fund will be spent as the station locally, to try out every conceivable means of stopping erosion and revegetating the reservation, and also to develop new and more diversified means of livelihood and sources of income for the Navajo nation, so as to enable them to reduce their number of sheep and thus reduce overgrazing and permit a recovery of grass. Such know-

ledge as is gained from the station, together with such knowledge as we already possess, will be applied on a grand scale to the reservation as a whole or in parts, depending on what cooperation the Indians are willing to give. Check dams in the arroyos will be built; new forms of irrigation will be developed; new crops will be introduced; grass and other forage crops will be replanted; methods will be found to keep the rain water on the land; and the way will be shown for the reclamation of the Indian lands.

In the carrying out of this great undertaking the Navajo Indians will have to take a most important part. They will do the work. They will make the sacrifices. They will reap the profit in the form of a reclaimed reservation and a higher standard of living, and in the perpetuation of their race.

ECW IN OKLAHOMA.

Mr. Daniel E. Murphy, Superintendent of the Osage Agency, Oklahoma, and at present connected with Emergency Conservation Work at the Washington Office, reports, after a field trip to Oklahoma, as follows concerning the progress of the Emergency Conservation program in that State:

Generally favorable reports as to ECW work in Oklahoma have been received. Mr. H. G. Lewis, Superintendent of the Red Plains Soil Erosion Experiment Station at Guthrie, Oklahoma, under the Department of Agriculture, is enthusiastic over the work being performed on reservations in that State. On September 20, in company with Captain Fred Verity, Project Manager for Oklahoma, he visited the Osage reservation where soil erosion work is being undertaken and expressed himself as well pleased not only with work on the Osage but with that on other reservations as well. Twenty-four Osage Indians were engaged in soil erosion work in the northern part of the reservation, and it is planned to extend this work to other parts of the reservation. The Osage Indians had been on the job but a few days, but showed commendable spirit and progress.

Captain Verity is the only white man paid from ECW funds on duty in Oklahoma. All other positions to date are occupied by Indians. Production Coordinating Officer Landman, Superintendent of the Five Tribes, is well pleased with the progress to date and stated there were at present between 700 and 800 Indians actually at work. This number will be increased undoubtedly.

Superintendent Correll of Chilocco is quite happy over the Emergency Conservation work at his station. There are approximately 9,000 acres of land in the reservation; approximately 100 men are now

at work. Mr. Correll stated that the soil-saving dams already constructed proved their worth during the recent storm.

Mr. Berry, Acting Superintendent at Pawnee Agency, reports that he has had as many as 130 men at work at his unit. The work was staggered to give more Indians a chance to work. He states he needs at least an additional \$15,000 to continue, and the matter has been referred to Mr. Landman, Production Coordinating Officer.

Mr. Ellis, Acting Superintendent at Osage is well pleased with the prospects at Osage. Although work has only started within the past two weeks the Indians are appreciative of the opportunity offered and are taking advantage of it.

Mr. Landman, Superintendent of the Five tribes Agency, and Production Coordinating Officer for Oklahoma states that the ECW program has proven a decided benefit already, both from a standpoint of work and relief.

Projects are being undertaken at the following units: Choctaw-Chickasaw Sanatorium, Jones Academy, Sequoyah Training School, Pawnee Agency, Cheyenne and Arapaho Agency, Chilocco School, Eufaula School, Wheelock Academy, Carter Seminary, Kiowa Agency, Osage Agency, and Shawnee Agency.

RANGE IMPROVEMENT, PLAINS REGION

By J. D. Lamont

Production Coordinating Officer

The Emergency Conservation Act of March 31, 1933 provided in part "for the restoration of the country's depleted natural resources and the advancement of an orderly program of useful public works" by "employing citizens of the United States who are unemployed, in the construction, maintenance and carrying on of works of a public nature in connection with----- the prevention of-----floods and soil erosion".

The Purpose of the Work

Indian Reservations in Montana; Wyoming and North and South Dakota constitute a considerable proportion of the land area of the northern great plains region. The reservations lying east of the continental divide in these states have an area in excess of fifteen million acres of which over twelve million acres are classified as grazing land. Millions of dollars have been expended on flood control work in the Mississippi Valley. More consideration should and is being given to the regulation of stream flow in the headwaters of the Mississippi River drainage, in-

cluding its principal tributary, the Missouri River, which drains practically all of the Indian Reservation lands in the northern plains area. Any regulatory measures concerning the conservation of water on Indian Reservations in this region must deal primarily with range lands because of the large proportion of such lands compared to the total area of Indian lands. These measures, while fundamentally for the control of erosion and run-off water, will improve the range and should do much to promote and conserve the grazing resources of the Indians.

Conservation Methods Being Followed

The approved projects in this district include the construction of a large number of small dams to form reservoirs which will catch and hold back hundreds of millions of gallons of water during periods of heavy precipitation. This action will tend to regulate the flow of water in the streams and to prevent them from reaching a

flood stage with resulting damage to property. Manifestly, ideal conditions will not be obtained until there are a sufficient number of reservoirs on a drainage system to avert a flood, but the construction of dams as a part of the Emergency Conservation Work may point the way for a great deal more of this type of work in the future.

Benefits To Be Realized From Conservation Work

The reservoirs being built in this region will serve a dual purpose in first impounding a large volume of water which may be used later by livestock on ranges which do not have sufficient water at present to permit the efficient management and utilization of the forage on the lands. These dams are being built on ranges which lack water and are being placed wherever possible so that stock will not have to travel in the rolling plains country more than two miles to water. Some ranges are only partially utilized and others are not used at all due to the absence of water. With the development of water on these large areas, the Indian allotted and tribal lands within these ranges can

be opened to grazing and an income derived from grazing fees or from the sale of stock raised on these units. In many cases the opening of the new areas, which will be supplied with water, will tend to relieve other ranges which have been overgrazed in the past and on which varying degrees of soil erosion are taking place. In order to make the best use of the funds available it is desirable to construct a number of small reservoirs on a range rather than one large one, so that water holes may be more frequently and evenly distributed over the range and thus prevent overgrazing near the water - a condition which exists where it is necessary for too many head of stock to use the same watering place.

Important Points in Dam Construction

Without entering into details regarding the construction of dams, the following are some of the points which are taken into consideration:

A reservoir with a short dam and a basin at least 10 or 12 feet deep is preferable to one with a long dam and shallow basin which will become dry due to the heavy evaporation in this region. It is estimated that 400 to 600 acres of drainage is sufficient for one reservoir, depending upon the average annual amount of precipitation, the topography, the character of the vegetation and the amount of water absorbed by the soil. A drainage is selected which is covered with a good stand of vegetation and sod so that the run-off will carry as little silt as possible. In some localities it is necessary to build a settling pond above the reservoir to catch the silt so as to prevent it

from filling up the reservoir too rapidly. These reservoirs and ponds will prove very beneficial in catching and holding back thousands of tons of soil which would otherwise be carried into the rivers. In order to prevent the loss of water by seepage, reservoirs are not constructed on loose soils. Wherever possible a natural spillway is selected for a dam and it must be large enough to carry away the full volume of run-off water after the reservoir is full, which is a point at least two feet below the top of the dam. As far as possible, dams are constructed so that the prevailing winds will not throw waves against them. A fence is built around the dam to keep stock off it. On the upper side of the dam the fence is constructed in the water and brush piled between the fence and the dam to prevent wave erosion.

Development of Springs

The development of springs is another improvement which is being made on the ranges in order to provide water so as to insure a more even distribution of stock and thus prevent overgrazing with resulting

erosion on some areas. Many springs which are mere seeps will provide water for a large number of stock if properly controlled and the water allowed to accumulate in troughs.

The Importance of Fencing in Range Improvement

Several fence projects have been approved for this district. Fences are necessary for proper range management so as to confine the stock to a given area and to exclude trespass stock which might increase the number of animals above the conservative carrying capacity of the range unit. The subdivision of large ranges into smaller units with fences permits the use of the system of deferred and rotation grazing whereby stock may be excluded from a range in alternate years, or whenever necessary,

in order to permit the natural re-seeding of the forage plants. Otherwise, the range may be depleted and serious erosion occur, if stock is permitted to eat the plants year after year before the seed has matured and scattered. Of course ranges which are conservatively stocked will usually mature sufficient seed so that deferred and rotation grazing will not be necessary. Fences will also serve the purpose of preventing stock from entering a range too early in the spring before the new growth has had time to establish itself.

The Care of Stock Driveways

Another necessary and useful range improvement on many reservations is the stock driveway provided to regulate stock crossing, entering or leaving the reservation, and over which stock is driven so as not to trespass upon the grazing units of others. These stock driveways must be cleared of obstructions and posted to indicate their direction and extent. Stock water is necessary on these driveways so that in some cases reservoirs and springs have to be developed. Driveways which handle an

unusually large number of stock should be inspected so as to make changes in their location whenever it appears that there is danger of erosion.

In some places it is necessary to build stock bridges in order to permit the stock to reach ranges which could not otherwise be utilized. It is also frequently necessary in the mountains in this district for stock to use horse trails to get from one part of the grazing unit to another.

The Eradication of Poison Plants

The eradication of plants poisonous to stock will also be a great improvement for the ranges. Substantial

losses are sustained each year by the Indian and white stockmen through the killing of animals that have eaten

poisonous plants such as larkspur. Proper utilization of parts of some ranges has been impossible because of the great number of these plants.

The best method of eradicating these plants is to grub them out. After this is done the areas may be grazed.

Revegetation to Prevent Erosion

An attempt is going to be made to revegetate some sandy areas which have become subject to wind erosion. It is believed that crested wheat grass is a hardy plant which will survive under hot, dry conditions and that after it is planted in rows several feet apart that it will seed the intervening spaces and form a sod which will prevent erosion. It

is possible that this grass will be used to some extent in the future to reestablish a sod on some of the range lands which have been plowed up in the past for farming and then abandoned and which produce mostly a crop of weeds now. Crested wheat grass is palatable and nutritious for livestock.

The Need for Rodent Control Work

An improvement being carried on in connection with the Emergency Conservation Program which will prove of great value to the ranges is that of rodent control. Prairie dogs, pocket and flickertail gophers, and ground squirrels are being killed off by the thousands with the use of poisoned grain deposited around their burrows. These small animals in the aggregate consume and destroy large quantities of forage which could be used to bet-

ter advantage to feed cattle, sheep and horses on the Indian Reservations. Large areas around prairie dog towns are often almost denuded of vegetation and this condition undoubtedly leads to the washing away of a considerable amount of top soil. The elimination of these rodents will greatly improve the condition of the ranges by providing additional feed for livestock and by preventing damage to the soil.

Measures Against Fires

Several hundred miles of telephone lines are being built and repaired in order to provide better administrative and fire protection facilities to the range lands. Several of the reservations in this district have large timber areas which are used for grazing purposes in connection with the open range country. It is necessary to have instant communication between different parts of the reservations in case of timber and grass fires. The telephone lines will be of great value in the protection of the Indian lands from fires. Many thousand acres of grazing lands have been burned over

this summer in this district and the loss of this forage has meant a great deal to the stockmen who were depending on these areas to help in carrying their stock through the winter season. These fires also do considerable damage to the lands in removing the ground cover which acts to protect the soil from erosion. The telephone lines will also be useful in quickly reporting cases of trespass.

The construction of many miles of truck and horse trails through the timbered ranges will assist in their administration and protection. Men can be

quickly transported to fires which are more easily extinguished in their incipency. In many cases these trails will prove advantageous lines from which to start back-fires in fighting forest and grass fires. The trails will also provide a means of transporting salt and other supplies to the more inaccessible parts of the ranges. The proper distribution of sufficient

salt affords one of the best means of drawing stock to all parts of the range and thus securing a more even utilization of all of the forage. There are many examples of parts of ranges being heavily overgrazed with the resulting effects of erosion while other areas on the same range have been grazed very little.

Value to the Country of I.E.C.W.

The range improvement work which is being done on the Indian Reservations in the northern plains region of the United States in connection with the Emergency Conservation Program will prove of inestimable value to the Indians and the country as a whole by conserving and properly utilizing the grazing resources on nearly 20,000 square miles of drainage in the upper Mississippi-Missouri watershed. It is estimated that the more than 40,000 Indians in this district have, in normal times, an average income of approximately \$25 per year from grazing permits

and leases and the sale of livestock. The range improvement work, together with efficient range management, should tend to increase this average income within the near future. It is hoped that the benefits to be derived from this work will be of such an exemplary nature that additional range improvement projects will be carried out during the coming years on all lands in the plains region so as to reduce soil erosion to a minimum through the maintenance of sufficient vegetation and prevent floods to a large extent through the regulation of stream flow.

CAMP NEWS--RED LAKE CAMP NO. 1.

The construction work at Camp No. 1 is practically completed. The power plant, which is not a new one but was used when the camp was a logging camp, has been put in good working order and is operated by local boys; we enjoy electric lights and they add to our hours of recreational programs, not only for outdoor sports, but for reading and indoor games. A new water tank has also been installed and the boys enjoy the running water.

We had a very good camp fire meeting this week, all the boys were on deck; health, education, cooperation were taken up and later we had group singing, tap dancing and music by the Camp's "Galloping Five". We closed with a song "Farewell to Thee".

Our baseball team again beat Ponemah by a score of 10 to 5. The volley ball team is getting into shape for a game with a C.C.C. team at Blackduck, a town near the reservation. The boxing ring is a busy place; many of the boys are acquiring a pretty good knowledge of the game. Swimming is just about over with up here in Northern Minnesota.

We hope to put on a "Fall Forest Festival", inviting the agency people and friends from neighboring towns. The program will bring forth all local talent in boxing, volley ball, singing, and tap-dancing, as well as the old time dance steps and will end with the singing of our Camp song.--S. S. Gurneau, Camp Manager.

INDIAN EMERGENCY CONSERVATION WORKERS RESTORE THE HISTORIC GRAND PORTAGE TRAIL

By J. H. Mitchell, Supervisor District I
and Charles H. Racey, Group Foreman

"Grand Portage, by the shores of Lake Superior to the Pigeon River, as now actually used, shall be free and open to the use of the citizens and subjects of both countries."

Thus reads the treaty of 1842 between Great Britain and the United States. And when President Tyler and his Secretary of State, Daniel Webster, by their signatures to that document set aside forever this international highway, it was not conceivable that this, the then sole artery of commerce and travel between the Great Lakes and Pigeon River, would fall into disuse because of want of maintenance.



The Grand Portage Trail Cleared After a Generation

Then the Grand Portage Trail was an integral part of the early fur routes - the most famous sector in the Northwest. Along this nine mile trail more than seven thousand Indian women were once employed in scraping skins for the Hudson Bay Company. The center of the fur industry, it also became the mecca for tradesmen and traveler. Yet, until yesterday, or to

be more exact, until Indian workers under President Roosevelt's Emergency Conservation Work program came on the scene, this historic trail was all but lost in a vast wilderness.

Heavy brush had overgrown it for more than a generation; the band of Indians at Grand Portage were finding it increasingly difficult to reach their rice fields over

it, and their hunting and fishing grounds had to be approached by circuitous and laborious routes. When it was whispered that Emergency Conservation funds might be used for clearing out this ancient highway, these Indians remembered the tales of the trail of their fathers; they wondered if in these modern times they might also benefit by a better "Grandor" Portage.

A Group Foreman Tells The Story

So, on July 10 of this year, the work of brushing began. By September 10 there was not a bush left standing, and Indians and tourists alike were making the nine miles of this once impassable trail in perfect comfort. Mr. Charles H. Racey, group foreman of the Indian crew which did the work, tells the story of the restoration.

Mr. Racey says, "For the first mile the Grand Portage trail was brushed to a distance of fifty feet on each side, thereafter to a distance of eight feet. The work was completed in four weeks. The actual working day was but six and a half hours, since an hour and a half was spent in travelling to and from work. During the last few days of work on the trail, it was necessary for the men to walk from six to eight miles to and from

They said, "If you clear this trail, we can reach the navigable waters of the Pigeon River and our traders and travelers can proceed by canoe, as did our ancestors." Trained foresters said, "If the trail is opened, it will aid in fire protection." Likewise the commercial instinct of the Indians told them that if Grand Portage were restored there would be a profitable influx of tourists. It would bring a new day to their isolated, difficult country.

work each day, in addition to riding eighteen miles on the truck.

"When we were caught in sudden showers while at work, it was necessary for us to take refuge under improvised shelters. While the Indians 'knew enough to come in out of the rain', they actually had to be ordered to stop their work. They never required a command to resume operations after the noon hour. Many of them were busy with axe or brush hook before one o'clock. In all the miles that these men plodded over rocky trails to and from this job, sometimes drenched to the skin, sometimes packing heavy loads of tools and equipment, there was never a word of complaint. Many of them wore shoes which only half-covered their feet and not a few were inadequately clothed until after their first pay day.

The Indians Become Archeologists

"Some of the Indians in the crew became amateur archeologists. The sharp eyes of an Indian were needed to discover what had passed unnoticed for a hundred and thirty years - three inches of rusty gun barrel protruding from the leaf mould at the side of the trail, part of an old flintlock, deeply imbedded in the soil under the roots of a rotted stump on the site of Fort Charlotte, a fur trading post abandoned in 1804.

"Other relics - knives, portions of chinaware, pieces of clay tobacco pipes and other flintlock barrels - have since been found by our men working at the site of Fort Charlotte or at Grand Portage. The Indians have turned their findings over to the Cook County Historical Society and a special section has been reserved in the museum at Grand Portage for objects of historical interest found by our enrolled men.

A Multitude of Virtues

"At Grand Portage there is no camp. The Indian workers live at home. Baseball and dancing are the chief forms of

of amusement. There is a game every night and one or more each Saturday and Sunday afternoon. The baseball made by

one of our Indian boys is as good, both in performance and appearance, as any manufactured ball.

"In the village of Grand Portage the word "dancing" covers a multitude of virtues. Everyone dances. There are native dances, old-fashioned square dances and modern dances. Every Saturday night a dance is held at one of the Indian homes - a community dance open

to all. The square dance used by the Grand Portage Indians is said to be handed down from the time of the early French and English fur traders and settlers. Violin and guitar provide the musical accompaniment for these dances, and there are few Indians, young or old, who cannot play one or both of these instruments. Yes, the Grand Portage Indians have proved themselves efficient both at work and play. They have exploded one more Indian fallacy - for they can and will work."

* * * * *

UTE MOUNTAIN CONSERVATION NOTES

Our camp village of 20 tents lies on Sleeping Ute or Ute Mountain, 4 miles northwest of Ute Mountain School. This is our base camp from which our foremen and production supervisor work. Men living at our camp are building a truck trail. We have four other groups of enrolled men at small outlying camps, boarding themselves. Two of these groups are making pack trails, and two are building reservoirs. All these groups have made good progress.

We challenge any other Indian Conservation Camp to uncover as many natural curiosities as we have found on this reservation. One of these, is a stream of steam, at the head of Grassy Canyon, about 25 miles west of Marvel, Colorado. The rocks where the steam comes out are unbearably hot. Our men, camping near the jet of steam have rigged a canvas over it and use it for their sweat baths.

The grader has uncovered a hole in the side of the hill near the base camp. Out of this hole a steady cold breeze blows. We plan to dig farther into the mountain hoping that we may find a new Cave of the Winds. On the other side of our main camp there is a small mesa which contains Indian ruins galore. Broken pieces of pottery lie scattered on the ground. Several mounds lie covered with a heavy growth of sage brush. Bones of one human skeleton have been found sticking out of the ground.

These natural curiosities, together with ball games, reading in the recreation tent and a radio afford wholesome recreation.--Harold Turner, Camp Manager.

MEMORANDUM REGARDING INDIAN EMERGENCY CONSERVATION CAMPS

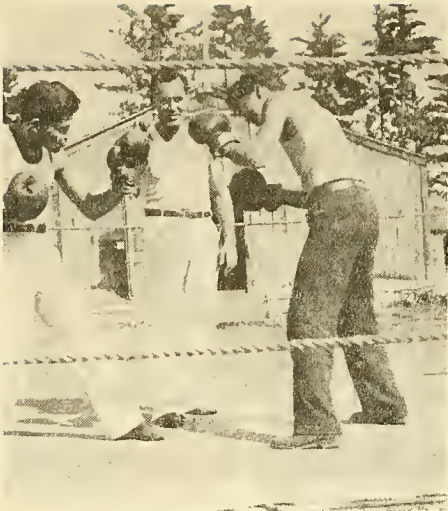
By M. K. Sniffen, Secretary of The Indian Rights Association

On my recent trip of three months in the Indian country, I found the Conservation camps in process of organization in the Southwest. The first one I saw in full operation was on the Hoopa Valley Reservation, California. Coming east from the Pacific Coast, I visited camps at the Yakima Reservation, Washington; Colville Reservation, Washington; Flathead Reservation, Montana; and Red Lake Reservation, Minnesota.

In general, I found these camps functioning effectively. The sites were well chosen, and everything possible was done to make them comfortable and convenient for the men, both as to creature comforts and recreation. Care was taken to secure an ample supply of good water; the food was good in quality and quantity. I arrived at all these camps close to meal time and sat down at the same tables with the men and got just what was served to them. I was favorably impressed with the type of Camp Manager at each place. They were interested in their work, seemed to understand men and be possessed of the qualities needed for leadership. That partly explained why the morale at the average camp was excellent.

The work being done at these camps will be of permanent benefit to the reservations concerned, through the construction of truck trails, affording better opportunity for fire protection of forests; eradication of tree infection (white pine blister, etc); erosion control and so forth. The benefit to the Indians, through regular employment, ample and well-balanced meals, wholesome recreation and comfortable living conditions, will undoubtedly result in better health, and the training will be preparation for them in some useful occupation when the depression is over.

INDIAN IECW PICTURES



Leisure Time at Red Lake



Cleaning Right of Way, Warm Springs



Trail Building, E. Cherokee



Indian Truck Drivers, San Carlos



Archery Contest, S. Navajo



Saw Filing Device, made by
a Nevada Paiute, Warm Springs



Type Of Land Served By IECW Dams at Crow Creek



Camp Number 2, Zuni



Logs For Spring Development, Ft. Berthold



Entrance to Camp, Lac du Flambeau

THE LIST OF INDIANS IN RESPONSIBLE POSITIONS CONTINUES TO GROW

We prophesied in the first issue of INDIANS AT WORK that the list of Indians holding responsible positions under the Emergency Conservation Program would steadily grow. This prophecy has been fulfilled. Each week Progress Reports coming from the various camps tell of more and more positions of a supervisory nature being filled by Indians. Not only is this the case, but as will be noticed by the examples cited below, there is being developed an increasingly large number of Indians capable of accepting foremen's jobs on the various types of projects. In view of the imminent road building program, the forestry program and other construction projects about to be undertaken on Indian lands, this is one of the most gratifying aspects of the Indian Emergency Conservation Work.

A few examples follow:

San Carlos. Our straw bosses, grader men, powder men and truck drivers are all full-blood Apaches and doing very efficient work. All the men show a willingness to work and cooperate in all assignments. W. H. Grattan, Camp Manager.

Truxton Canon. An Indian woman has been enrolled and she aids the camp superintendent in keeping the camp clean and orderly. Louis S. Reed, Supervisor.

Cheyenne River. At Cheyenne River the work has developed a bunch of men who can take a foreman's position on any of the jobs. It is also developing a willingness among these men to assume responsibility. When the present work is completed we will have men who can take charge of crews on road work. George M. Nyce, Associate Ranger Supervisor.

Tongue River. At Ashland family camp, the following Indians are in

responsible position: S. B. Miller, camp manager; A. Monoth, blacksmith; C. Pierce, trail locator; D. Walking Bear, blacksmith; H. Spong, grader operator; L. Brueninger, stenographer clerk. Tom C. White, Forest Engineer.

San Xavier. One crew, that engaged on Charco No. 1, using 20 teams and a tractor, is directly under an Indian foreman. L. M. Armstrong, Camp Manager.

On our Well Number 1 we have encountered very hard material, largely caliche, requiring blasting. This work is directly under an Indian foreman, who is greatly interested in getting his job done well. J. T. Burke, Project Manager.

Crew working on north boundary is directly under an Indian foreman. They have worked nine miles of truck trails, put in six miles of iron posts, driving them 24 inches in the ground, 12 feet apart, using a 12 pound sledge hammer and wooden maul. Tom Manslee, Group Foreman.

Fort Hall. One new fence building crew is under an Indian foreman, Mr. Ralph Dixey. I found an excellent spirit and morale among the men.

There is also a well-managed family camp under an Indian foreman, Jack Burns. Claude C. Cornwall, Supervisor.

Fort Belknap. Very good work being done on this project under leadership of Indian foreman. Used 9 Indian teams doing work grading mountain road with ploughs and slip scrapers. This road will be of special benefit to Indians in the Lodgepole district. James B. Ring, Camp Manager.

Hualapai. A crew of 22 Indians, under the leadership of Suwin Fielding, Indian foreman, is progressing satisfactorily with the construction of approximately four miles of wire fencing over a rocky ridge. Dynamite and rock drills have to be used constantly. H. H. Schmocker.

Hopi. All dams were well under way at Projects 96-98 when first visited, being started by Sam Wilson (Indian) who has had experience in dam construction. The crews were well organized and doing their work in fine shape. They are a fine bunch of workers.

Project number 84, a reservoir with Henry Zah in charge was almost completed on Saturday. Henry has done an excellent job and is completing a structure that should last for years. Edgar K. Miller, Superintendent.

Papago - Sells. Indian foreman Juan Serapo showed excellent judgment in the placing of fences on his erosion control project. This he did without supervision as we were unable to reach his camp owing to the floods. His results

were entirely correct in all respects. W. F. Gettlemen, Production Supervisor.

Warm Springs. Our Indian foremen are doing good work and in general the morale of the men enrolled in the camps is high. They are proving willing workers, and unquestionably they have improved in physical condition and general outlook.

Consolidated Chippewa. At Consolidated Chippewa, the following Indians are in responsible positions: Frank Boker, foreman; William Coffey, mechanic; J. Henry Broker and Joseph D. Solomon, assistants; Reuel P. Detling, clerk; Ed M. Wilson, sub-foreman. William Heritage.

Red Lake. At Red Lake, the following Indians are in responsible positions: Charles Dolson and Henry Sayers, group foremen; John Spears, mechanic; George Kelly, machine operator; Otto Thunder, blacksmith; Joe Fairbanks, Spencer Whitefeather and George Oniel, sub-foremen. William Heritage.

Unit No. 1 at Red Lake, known as the Ponemah Camp, has ninety men housed in a modern, well-equipped logging camp and is efficiently managed by Samuel Guerneau, an Indian. Guerneau is an eastern college graduate whose background and training in welfare work helps his even more important qualifications of adaptability and industry. J. H. Mitchell, Supervisor.

Yakima. The actual construction of our Olney Creek Camp was carried out by Dan Varner, an Indian, with a crew of Yakima Indians. The work followed the blueprints perfectly and is a credit to Indian workmanship. C. R. Whitlock, Superintendent.

THE CLOUDBURSTS AT CROW CREEK AND ZUNI

Two cloudbursts, one resulting in tragedy, have recently broken over country in which Indian Emergency Conservation Work was being done. One was at Crow Creek and the other at Zuni. The former resulted in the loss of eight lives. Of it Mr. George C. Hepworth, Production Supervisor, reports:

"The cloudburst came between 1:00 and 2:00 A. M. The stream back of the Agency, which carries off the average rain, was out of its banks and a wall of water some ten feet high came down, carrying away one Indian home and drowning four grown people and four children. Several other families were forced to get into trees and on top of their cabins.

brush filled the creek, and the crew was set to work cleaning out these obstructions so that the water can get away better.

"Two of our new dams were filled. They withstood the excess rain perfectly. So we think they are built right and I believe the Indians will take pride in their work."

"Parts of buildings and trees and

From Zuni

From Zuni the report is as follows:

"Friday night, September 8, there was a cloudburst in the northwest corner of the reservation extending for several miles, which takes in the district known as the Coal Mine Canon, and the flood resulting caused extensive damages to the erosion control projects completed and under construction.

"The crews working out of Camp One, because of the suddenness of the flood on the Coal Mine Canon, were caught on the opposite side from their camp and it was necessary for some of them to use ropes. All joined in getting the trucks, teams and equipment onto high ground, working the greater part of Friday night."

Of the experiences of the men at Camp One, Mr. Philip E. Stevenson, Camp Superintendent, writes:

"After vain attempts to dig out mired vehicles, the men made their way to camp on foot, straggling in, drenched, a few at a time, from 4 o'clock on. We were prepared with plenty of hot water, and supper was delayed till all should be in. Six, however, failed to appear until, at about 8, a hail was heard from across a roaring arroyo, calling for a rope. This was sent, and all six were hauled across the stream one at a time. They reported

that one of them had nearly drowned earlier, trying to wade the stream. These men were given a hot supper at 9, with aspirin for dessert, followed by hot showers and dry clothing. Later that night the big dam in our Nutria canyon burst, carrying away the underpinnings of a bridge connecting camp with the Agency. The whole country was swamped, and no work could be done next day, except by a few men detailed to extricate mired trucks. By evening all enrolled

men had left for home to get dry clothing, on project work.
and the rain continued to fall til Sunday night.

"Due to the washing out of truck trails and crossings, it was Thursday before a full crew could be put back

"The camp, however, stood the flood well. Men's tents kept dry, no flood water reached the well, and there was plenty of hot water at all times."

A PLAN FOR A CAMP CONTEST

Mr. E. A. Pritchard, Supervisor, Indian Emergency Conservation Work, sends us the following plan for a camp contest, to be held between the various camps in a District. He lists the following points as a suggested means of grading:

<u>CAMP</u>	<u>Points</u>
1. Attractiveness of campsite, with special reference to attractive additions which have been made by the camp personnel.	10
2. Neatness and attractive arrangement of living quarters.	10
3. Sanitary conditions of the camp:	10
(a) Grade of water source and storage.	
(b) Care of foodstuffs.	
(c) Neatness of kitchen and mess hall.	
(d) Adequate garbage disposal.	
(e) Sanitary latrines.	
(f) Absence of odors, insects and dust nuisances.	
4. Camp morale or spirit of the camp personnel during work and after working hours.	20

PRODUCTION:

1. Quantity and quality of work accomplished per man hour by the camp personnel.	40
2. Organization of working groups for prevention of accidents.	10

The Cover Page shows a Spring and Reservoir Combined Project, Southern Navajo.



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